

L21 ANSWER 16 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN

AB Using Allium cepa chromosomes after 5-bromo-2'-deoxyuridine (BrdU) incorporation, several acid and basic dyes and fluorochromes were studied for their potential as substitutes for 33258 Hoechst in the fluorescence-plus-Giemsa (FPG) technique. All of the dyes and fluorochromes investigated showed a photosensitizing capacity which was slightly lower than 33258 Hoechst in the cases of daunomycin, phloxin, fluorescein, thioflavine T, and nuclear fast red, and somewhat higher in the case of eosine Y. Observation and cytophotometric anal. of differentially Giemsa-stained sister chromatids when eosine Y was used as the photosensitizing agent revealed the unsubstituted chromatid to be reddish violet in color (absorption maximum, 550 nm), whereas the BrdU-substituted chromatid was blue or pale violet blue (absorption maximum, 580 nm). Thus, eosine Y appears to be a useful photosensitizing dye which could be used as a substitute for 33258 Hoechst in the FPG staining technique.

AN 1985:574838 CAPLUS

DN 103:174838

TI Photosensitizing dyes and fluorochromes as substitutes for 33258 Hoechst in the fluorescence-plus-Giemsa (FPG) chromosome technique

AU Hazen, M. J.; Villanueva, A.; Juarranz, A.; Canete, M.; Stockert, J. C.

CS Fac. Cienc., Univ. Auton. Madrid, Madrid, 28049, Spain

SO Histochemistry (1985), 83(3), 241-4

CODEN: HCMYAL; ISSN: 0301-5564

DT Journal

LA English

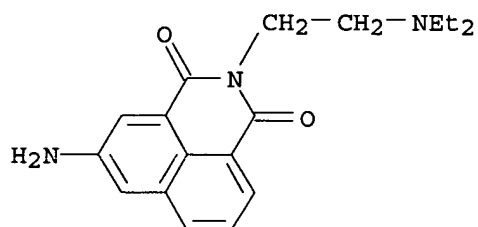
IT 69408-82-8

RL: ANST (Analytical study)

(staining by, of chromosomes by fluorescence-plus-Giemsa technique, 33258 Hoechst in relation to)

RN 69408-82-8 CAPLUS

CN 1H-Benz[de]isoquinoline-1,3(2H)-dione, 5-amino-2-[2-(diethylamino)ethyl]-(9CI) (CA INDEX NAME)



L21 ANSWER 6 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN

AB N-(aminoalkyl)-4-chloronaphthalene-1,8-dicarboximides (1), N-(aminoalkyl)-4-acetamidonaphthalene-1,8-dicarboximides (3) and N,N'-bis(aminoalkyl)-perylene-3,4:9,10-tetracarboxy-dimides (4) show good fluorescent off-on switching in aqueous alc. solution with protons as required for fluorescent PET sensor design. The excitation wavelengths lie in the UV ( $\lambda_{\text{max}}$ =345 and 351 nm) for (1) and (3) and in the blue-green ( $\lambda_{\text{max}}$ =528, 492 and 461 nm) for (4); the emission wavelengths lie in the violet ( $\lambda_{\text{max}}$ =408 nm) for (1), in the blue ( $\lambda_{\text{max}}$ =474 nm) for (3) and in the yellow-orange ( $\lambda_{\text{max}}$ =543 and 583 nm) for (4). Compound 4b shows substantial fluorescence enhancement with protons when immobilized in a poly(vinyl chloride) matrix, provided that 2-nitrophenyloctyl ether plasticizer and K tetrakis(4-chlorophenyl)borate additive are present to prevent dye crystallization and to facilitate proton diffusion into the membrane, resp.

AN 1998:625524 CAPLUS

DN 129:297597

TI Arenedicarboximide building blocks for fluorescent photoinduced electron transfer pH sensors applicable with different media and communication wavelengths

AU Daffy, Lynda M.; De Silva, A. Prasanna; Gunaratne, H. Q. Nimal; Huber, Christian; Lynch, P. L. Mark; Werner, Tobias; Wolfbeis, Otto S.

CS School Chemistry, Queen's University, Belfast, BT9 5AG, UK

SO Chemistry--A European Journal (1998), 4(9), 1810-1815

CODEN: CEUJED; ISSN: 0947-6539

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

IT 4928-73-8 73528-90-2 85224-18-6

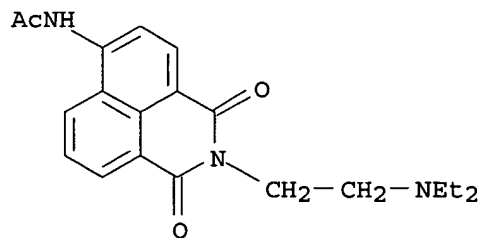
88145-20-4 214284-51-2

RL: ARU (Analytical role, unclassified); DEV (Device component use); PRP (Properties); ANST (Analytical study); USES (Uses)

(arenedicarboximide building blocks for fluorescent photoinduced electron transfer pH sensors applicable with different media and communication wavelengths)

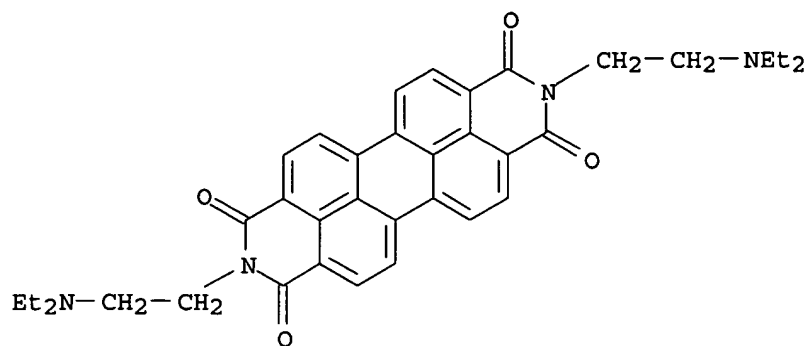
RN 4928-73-8 CAPLUS

CN Acetamide, N-[2-[2-(diethylamino)ethyl]-2,3-dihydro-1,3-dioxo-1H-benz[de]isoquinolin-6-yl]- (9CI) (CA INDEX NAME)



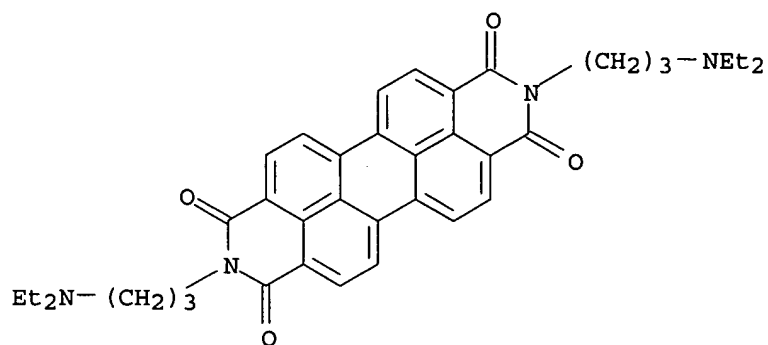
RN 73528-90-2 CAPLUS

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 2,9-bis[2-(diethylamino)ethyl]- (9CI) (CA INDEX NAME)



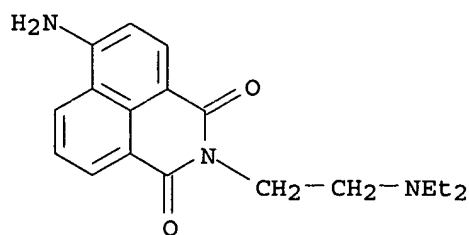
RN 85224-18-6 CAPLUS

CN Anthra[2,1,9-def:6,5,10-d'ef']diisoquinoline-1,3,8,10(2H,9H)-tetrone,  
2,9-bis[3-(diethylamino)propyl]- (9CI) (CA INDEX NAME)



RN 88145-20-4 CAPLUS

CN 1H-Benz[de]isoquinoline-1,3(2H)-dione, 6-amino-2-[2-(diethylamino)ethyl]-  
(9CI) (CA INDEX NAME)

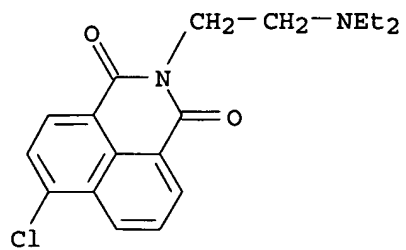


RN 214284-51-2 CAPLUS

CN 1H-Benz[de]isoquinoline-1,3(2H)-dione, 6-chloro-2-[2-(diethylamino)ethyl]-  
(9CI) (CA INDEX NAME)

07/09/2006

Page 3

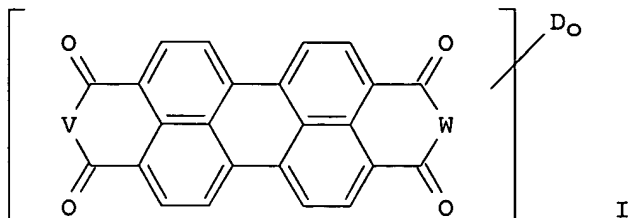


RE.CNT 83

THERE ARE 83 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

10658648

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GI



AB The prepns., containing (a)  $\geq 1$  organic pigment, (b1)  $\geq 1$  pigment dispersant of the formula I [V = W = NZ; each Z = amino- or OH-containing org group [1 Z may be H, OH, NH<sub>2</sub>, (un)substituted Ph or C1-20 alkyl]; o = 0], and (b2)  $\geq 1$  acid group-containing perylene pigment dispersant [I; each D = Cl, Br; V = O, NR<sub>1</sub>, W; R<sub>1</sub> = H, (un)substituted Ph or C1-20 alkyl; W = NR<sub>2</sub>Y- X<sup>+</sup>; R<sub>2</sub> = spacer group; X = H, 1 equiv metal ion; Y = CO<sub>2</sub>, SO<sub>3</sub>; o = 0-6], have favorable rheol. and coloristic characteristics. Thus, I [V = NMe, W = N(CH<sub>2</sub>)<sub>2</sub>SO<sub>3</sub>H; o = 0] (II) and I [V = NMe, W = N(CH<sub>2</sub>)<sub>3</sub>NH(CH<sub>2</sub>)<sub>2</sub>NH(CH<sub>2</sub>)<sub>3</sub>NH<sub>2</sub>; o = 0] (III) were prepared by condensing I (V = NMe, W = O; o = 0) with taurine and [H<sub>2</sub>N(CH<sub>2</sub>)<sub>3</sub>NHCH<sub>2</sub>]<sub>2</sub>, resp. A mixture of 10 parts C.I. Pigment Red 179 with 0.45 part each of II and III was used as the base for a high-solids transparent coating with good rheol.

AN 2000:512711 CAPLUS

DN 133:121711

TI Pigment preparations containing several perylene derivatives

IN Weber, Joachim; Urban, Manfred; Opravil, Manfred; Dietz, Erwin

PA Clariant G.m.b.H., Germany

SO Ger. Offen., 31 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19902907	A1	20000727	DE 1999-19902907	19990126
	EP 1024177	A2	20000802	EP 2000-100711	20000114
	EP 1024177	A3	20020320		
	EP 1024177	B1	20040407		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	ES 2219205	T3	20041201	ES 2000-100711	20000114
	JP 2000297224	A2	20001024	JP 2000-16269	20000125
	US 6413309	B1	20020702	US 2000-491318	20000125
PRAI	DE 1999-19902907	A	19990126		

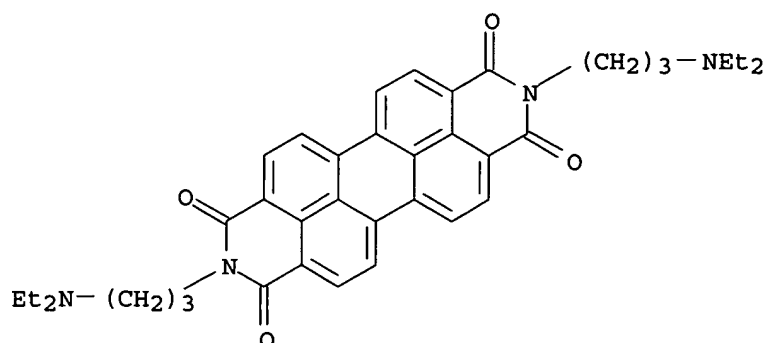
OS MARPAT 133:121711

IT 85224-18-6P 238755-78-7P 238755-79-8P  
286014-28-6P 286014-40-2P 286014-62-8P  
286014-63-9P 286014-64-0P 286014-65-1P  
286014-66-2P 286014-67-3P

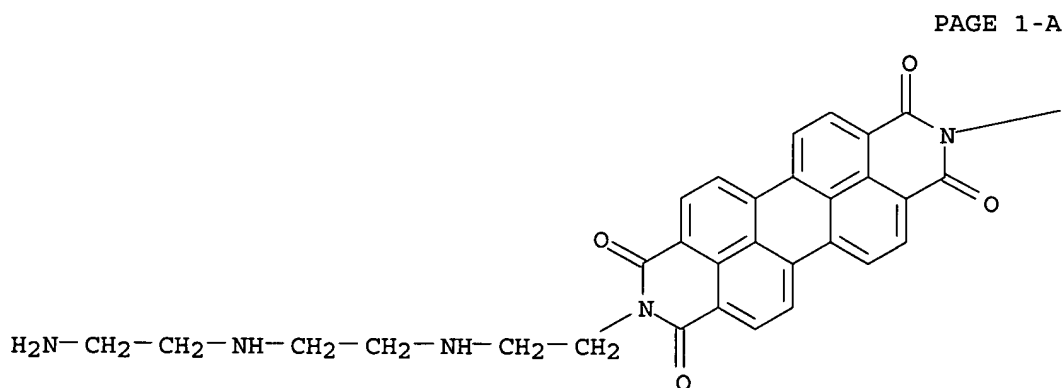
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(dispersant; pigment prepns. containing several perylene derivs.)

RN 85224-18-6 CAPLUS

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,  
2,9-bis[3-(diethylamino)propyl]- (9CI) (CA INDEX NAME)

RN 238755-78-7 CAPLUS

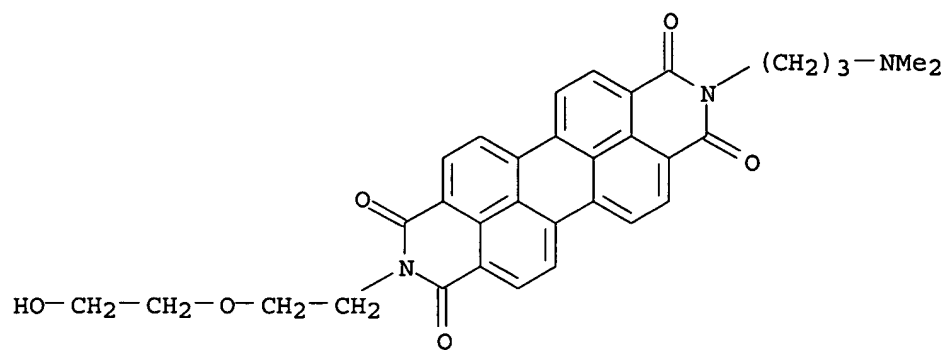
CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,  
2-[2-[[2-[(2-aminoethyl)amino]ethyl]amino]ethyl]-9-[3-(dimethylamino)propyl]- (9CI) (CA INDEX NAME)

PAGE 1-B

-(CH2)3-NMe2

RN 238755-79-8 CAPLUS

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,  
2-[3-(dimethylamino)propyl]-9-[2-(2-hydroxyethoxy)ethyl]- (9CI) (CA INDEX NAME)



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GI For diagram(s), see printed CA Issue.

AB The brightening agents (I) are strongly greenish blue fluorescent when dispersed or dissolved in solvents or when applied to synthetic polymers, for which they have a high affinity. I are prepared by alkylation of appropriate 4-mercaptanaphthalimides I (R = H) (II). Thus, 25.2 parts Me<sub>2</sub>SO<sub>4</sub> was added to a solution of 12 parts NaOH and 26.5 parts of the Na salt of II (R' = Me) in 500 parts H<sub>2</sub>O at 20-30° and the mixture stirred 10 hrs. to give I (R = R' = Me), m. 219.5-20°. Similarly prepared were the following I (R, R', and m.p. given): Bu, Me, 101-2.5°; Me, Bu, >330°; Me, HO(CH<sub>2</sub>)<sub>2</sub>, 176.8-7.2°; Me, H, 285.2-8.8°; Me, Me<sub>2</sub>N(CH<sub>2</sub>)<sub>3</sub>, 196-201.5°; Me, Ph, 296.8-71.2° (sic); HO(CH<sub>2</sub>)<sub>2</sub>, Me, 127.5-31.5°; Me<sub>2</sub>N(CH<sub>2</sub>)<sub>2</sub>, Me, 121.8-4.0°; PhCH<sub>2</sub>, Me, 178.8-9.5°; 4-nitrophenyl, Me, 237.5-8.5°; 4-(N-methylnaphthalimido), Me, 299-303.2°. II are prepared by the action of Na<sub>2</sub>S or Na<sub>2</sub>S<sub>2</sub> on the 4-Cl analog (III). Thus, a mixture of 15.6 parts Na<sub>2</sub>S, 24.6 parts III (R' = Me), 100 parts H<sub>2</sub>O, and 200 parts MeOH was refluxed 4 hrs., the mixture cooled to 50°, and a solution of 20.8 parts NaHSO<sub>3</sub> in 40 parts H<sub>2</sub>O added. The filtered solution was acidified with HCl to precipitate 19.5 parts II (R' = Me), m. 214.5-16.2°. A solution of 22 parts Na<sub>2</sub>S<sub>2</sub> and 28.2 parts III (R' = Bu) in 110 parts H<sub>2</sub>O and 200 parts EtOH refluxed similarly and treated as before gave II (R' = Bu), m. 116.5-18°.

AN 1967:76934 CAPLUS

DN 66:76934

TI Naphthalimide fluorescent brightening agents

IN Senshu, Hisashi; Yamashita, Masao

PA Mitsubishi Chemical Industries Co., Ltd.

SO Brit., 11 pp.

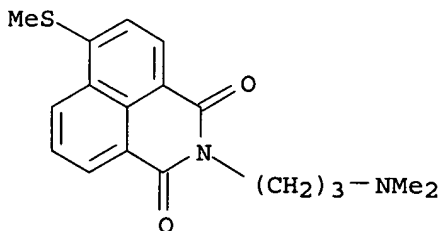
CODEN: BRXXAA

DT Patent

LA English

FAN.CNT 1

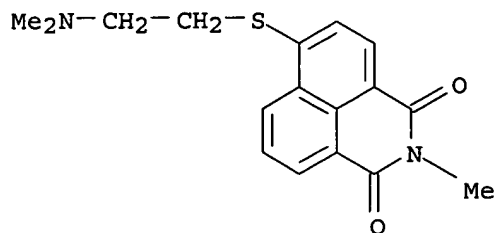
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 1054436		19670111	GB	19631018 <--
IT	2879-45-0P 2879-46-1P				
	RL: IMF (Industrial manufacture); PREP (Preparation) (preparation of)				
RN	2879-45-0 CAPLUS				
CN	Naphthalimide, N-[3-(dimethylamino)propyl]-4-(methylthio)- (7CI, 8CI) (CA INDEX NAME)				



RN 2879-46-1 CAPLUS

CN Naphthalimide, 4-[[2-(dimethylamino)ethyl]thio]-N-methyl- (8CI) (CA INDEX NAME)





L21 ANSWER 25 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN

GI For diagram(s), see printed CA Issue.

AB Compds. of the formula I are optical brightening agents for polyvinyl, polyacrylonitrile, polyamide, polyester, polyolefin, and acetylcellulose textile materials. Thus, a mixture of N-methyl-4-sulfonaphthalimide Na salt 30, NaOH 30, and MeOH 300 parts was refluxed for 10 hrs. with stirring, cooled, filtered, and the precipitate washed with MeOH and H<sub>2</sub>O to give 22.8 parts

I, R<sub>1</sub> = R<sub>2</sub> = Me (II), m. 198.8-9.2°, with a blue violet fluorescence in organic solvents. II was obtained also by a similar treatment of N-methyl-4-bromo or -4-nitronaphthalimide, or by heating N-methyl-4-hydroxynaphthalimide with Me<sub>2</sub>SO<sub>4</sub>. The following I were prepared similarly (R<sub>1</sub>, R<sub>2</sub>, and m.p. given): Ph, Me, 177.5-8.5°; Me, Ph, 244.3-4.8°; EtOCH<sub>2</sub>CH<sub>2</sub>, Me, 124.5-6.0°; PhCH<sub>2</sub>, Me, 198.8-200.5°; Ph, Ph, 274-5.2°; HOCH<sub>2</sub>CH<sub>2</sub>, Me, 196.8-8.5°; Me<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>, Me, 142.8-4.0°; Et, Me, 167.5-8.0°; Me, H, 307.5-9.8°.

AN 1964:83390 CAPLUS

DN 60:83390

OREF 60:14650g-h,14651a

TI Optical brightening agents

IN Senshu, Hisashi; Yamashita, Masao

PA Mitsubishi Chemical Industries Co., Ltd.

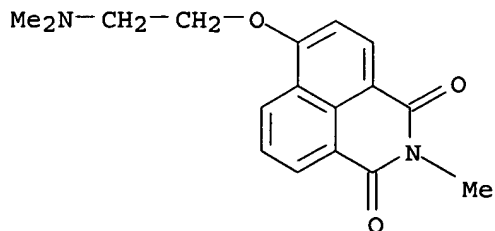
SO 29 pp.

DT Patent

LA Unavailable

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 1344883		19631206	FR 1962-894239	19620412 <--
PRAI	JP		19610412		
IT	2495-01-4, Naphthalimide, 4-[2-(dimethylamino)ethoxy]-N-methyl-(preparation of)				
RN	2495-01-4 CAPLUS				
CN	1H-Benz[de]isoquinoline-1,3(2H)-dione, 6-[2-(dimethylamino)ethoxy]-2-methyl- (9CI) (CA INDEX NAME)				



L26 ANSWER 9 OF 17 CAPLUS COPYRIGHT 2006 ACS on STN

AB 4-(N,N-Dimethylaminoethylene)amino-N-allyl-1,8-naphthalimide was synthesized as a new polymerizable dye in monomeric form, and can increase its fluorescence intensity in the presence of protons or metal cations. Two intensely yellow-green fluorescent co-polymers of the dye with Me methacrylate (MMA) and styrene (ST) were obtained. These polymeric fluorophores, which could be used as heterogeneous photoinduced electron transfer (PET) fluorescent sensors, show different fluorescence behavior in the presence of protons and Cu<sup>2+</sup> ions, depending on the structures of their main polymer chains. The fluorescence of poly(MMA-co-dye) is not sensitive towards H<sup>+</sup> ions, but it is to Cu<sup>2+</sup> ions. That of poly(ST-co-dye) is sensitive to the presence of both H<sup>+</sup> and Cu<sup>2+</sup> ions, the signal increasing and decreasing, resp.

AN 2002:477954 CAPLUS

DN 137:272451

TI Novel heterogeneous PET fluorescent sensors selective for transition metal ions or protons: polymers regularly labeled with naphthalimide

AU Grabchev, Ivo; Qian, Xuhong; Xiao, Yi; Zhang, Rong

CS State Key Laboratory of Fine Chemicals, Dalian University of Technology, Dalian, 116012, Peop. Rep. China

SO New Journal of Chemistry (2002), 26(7), 920-925

CODEN: NJCHE5; ISSN: 1144-0546

PB Royal Society of Chemistry

DT Journal

LA English

IT 461670-68-8P 461670-69-9P

RL: ARU (Analytical role, unclassified); DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)

(novel heterogeneous PET fluorescent sensors selective for transition metal ions or protons with polymers regularly labeled with naphthalimide)

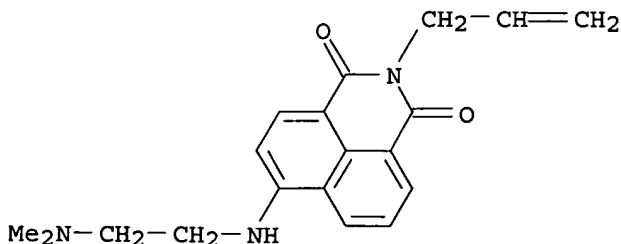
RN 461670-68-8 CAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 6-[[2-(dimethylamino)ethyl]amino]-2-(2-propenyl)-1H-benz[de]isoquinoline-1,3(2H)-dione (9CI) (CA INDEX NAME)

CM 1

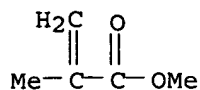
CRN 461670-67-7

CMF C19 H21 N3 O2



CM 2

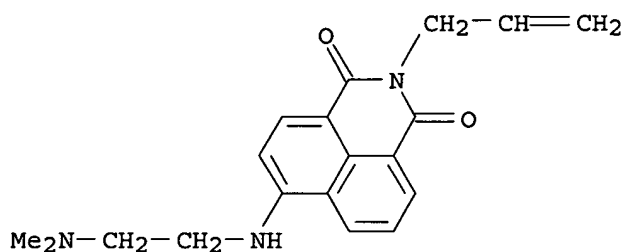
CRN 80-62-6  
CMF C5 H8 O2



RN 461670-69-9 CAPLUS  
CN 1H-Benz[de]isoquinoline-1,3(2H)-dione, 6-[[2-(dimethylamino)ethyl]amino]-2-(2-propenyl)-, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

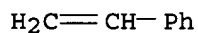
CM 1

CRN 461670-67-7  
CMF C19 H21 N3 O2



CM 2

CRN 100-42-5  
CMF C8 H8

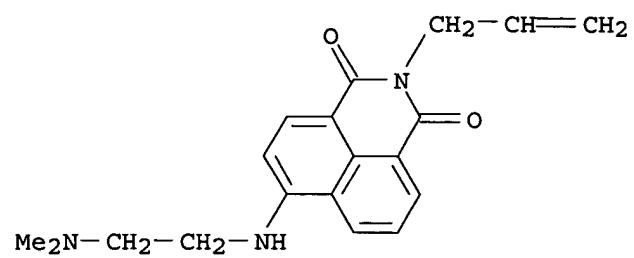


IT 461670-67-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and use in novel heterogeneous PET fluorescent sensors selective for transition metal ions or protons with polymers regularly labeled with naphthalimide)

RN 461670-67-7 CAPLUS  
CN 1H-Benz[de]isoquinoline-1,3(2H)-dione, 6-[[2-(dimethylamino)ethyl]amino]-2-(2-propenyl)- (9CI) (CA INDEX NAME)

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L21 ANSWER 26 OF 26 CAPLUS COPYRIGHT 2006 ACS on STN

AB 1,8-Naphthalic acid (I), anhydride (II), imide (III), and N-substituted imides, containing alkoxy groups, absorb in the ultraviolet and emit blue light and are whitening agents for fibrous materials and for bulk synthetic polymers. They have considerable thermal, chemical, and photochem. stability. 4-Methoxy-II (IV) (10 g.), m. 255-6°, and 100 ml. 28% aqueous NH<sub>3</sub> refluxed for 1 hr. gave 9.5 g. (97%) crude product, m. 320-2°, which was crystallized (AcOH) to give pale yellow 4-methoxy-III (V), m. 320-1°. Similarly IV with a primary amine gave the following N-substituted V (N-substituent, m.p. crude, % yield crude, and m.p. pure product given): Me, 197-201°, 91, 200-1° (AcOH); Et, --, 94, 152-3° (AcOH); Pr, 93-6°, 88, 111.5-12.4°; iso-Pr, 197-9°, 29, 198-9°; Bu, 100-3°, 78, 115-16°; cyclohexyl, 173-6°, 100, 186.5-7.5°; Ph, 206-7°, 100, 235-6°; m-C<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>OH, 223-6°, 95.5, 227.5-9.0°; p-C<sub>6</sub>H<sub>4</sub>SO<sub>3</sub>Na, --, --, --; m-C<sub>6</sub>H<sub>4</sub>SO<sub>3</sub>Na, --, --, --; p-C<sub>6</sub>H<sub>4</sub>NMe<sub>2</sub>, 317-18°, 67.5, --. The following 4-ethoxy-III (VI) were similarly prepared from 4-ethoxy-II, m. 183-4° (N-substituent, m.p., and % yield given): H, 261.5-2.0°, 90.3; Me, 173.5-4.0°, --; Et, 132.5-3.0°, 94.5; Pr, 132.5-3.0°, 96; iso-Pr, 135-5.5°, 31.4; Bu, 133-4°, 97; cyclohexyl, 195.5-6.0°, 40.3; Ph, 243-7°, --; o-C<sub>6</sub>H<sub>4</sub>Me, 187.5-8.5°, --; m-C<sub>6</sub>H<sub>4</sub>Me, 195.5-6.5°, --; p-C<sub>6</sub>H<sub>4</sub>Me, 266-7°, --. Imides were also prepared from 4-methoxy-I, 4-ethoxy-I, 4-propoxy-I, and 4-butoxy-I and from the following II (substituent and m.p. given): 4-PrO, --; 4-BuO, --; 2-MeO, 255°; 2-EtO, --; 3-MeO, 243-4°; 3-EtO, 224-5°; 3,4-(MeO)<sub>2</sub>, 280°. A solution of 6.36 g. 4-nitro-N-phenyl-III (VII) and 10.8 g. NaOMe in 2 l. MeOH containing Cu(OAc)<sub>2</sub> catalyst was refluxed for 5 hrs., the MeOH distilled, and the residue treated with aqueous AcOH to give

5.50

g. N-phenyl-V. Similarly, V derivs. were prepared from the following 4-substituted derivs. of III (4-substituent, N-substituent, and m.p. given): NO<sub>2</sub>, H, 287-8°; NO<sub>2</sub>, Me, 208-9°; NO<sub>2</sub>, Et, 187.5-8.5°; NO<sub>2</sub>, Pr, 135.5-6.5°; NO<sub>2</sub>, iso-Pr, 253.5-5.0°; NO<sub>2</sub>, Bu, 103.5-4.5°; NO<sub>2</sub>, Me<sub>2</sub>CHCH<sub>2</sub>CH<sub>2</sub>, 134-5°; NO<sub>2</sub>, HOCH<sub>2</sub>CH<sub>2</sub>, 155.5-6.5°; NO<sub>2</sub>, cyclohexyl, 209.5-10.0°; NO<sub>2</sub>, o-C<sub>6</sub>H<sub>4</sub>Me, 230-1°; NO<sub>2</sub>, p-C<sub>6</sub>H<sub>4</sub>Me, 246-7°; NO<sub>2</sub>, o-C<sub>6</sub>H<sub>4</sub>Cl, 207-8°; NO<sub>2</sub>, p-C<sub>6</sub>H<sub>4</sub>Cl, 274-5°; NO<sub>2</sub>, p-C<sub>6</sub>H<sub>4</sub>OMe, 249-51°; Cl, H, 301-2°; Br, H, 286°; Cl, Me, 174-5°; Cl, Bu, 92-4°; Cl, Ph, 241-3°; Cl, p-C<sub>6</sub>H<sub>4</sub>Me, 240-2°; Cl, p-C<sub>6</sub>H<sub>4</sub>OMe, 227-8°; Br, Bu, 104-5°; NH<sub>2</sub>, H, >360°; NH<sub>2</sub>, Me, 344-6°; NH<sub>2</sub>, Et, 279-80°; NH<sub>2</sub>, Pr, 249-50°; NH<sub>2</sub>, iso-Pr, >350°; NH<sub>2</sub>, Bu, 185-6°; NH<sub>2</sub>, Me<sub>2</sub>CHCH<sub>2</sub>CH<sub>2</sub>, 166.5-7.5°; NH<sub>2</sub>, HOCH<sub>2</sub>CH<sub>2</sub>, 260-1°; NH<sub>2</sub>, cyclohexyl, 242-3°; NH<sub>2</sub>, Ph, 302-4°; NH<sub>2</sub>, o-C<sub>6</sub>H<sub>4</sub>Me, 300-2°; NH<sub>2</sub>, p-C<sub>6</sub>H<sub>4</sub>NH<sub>2</sub>, 343-5°; NH<sub>2</sub>, o-C<sub>6</sub>H<sub>4</sub>Cl, 299-302°; NH<sub>2</sub>, p-C<sub>6</sub>H<sub>4</sub>Cl, >360°; NH<sub>2</sub>, p-C<sub>6</sub>H<sub>4</sub>OMe, 358-60°; NH<sub>2</sub>, xylyl, --. Me<sub>2</sub>SO<sub>4</sub> (55.5 g.) was added slowly to 50.0 g. N-methyl-4-hydroxy-III (VIII), m. 303.5-5.5°, and 21.1 g. NaOH in 500 ml. H<sub>2</sub>O, the mixture stirred for 1 hr. at 30° then for 1 hr. at 60°, the precipitate collected crystallized (AcOH) to give 15 g. N-methyl-V (IX). Similarly, 30.0 g. VIII, 33.6 g. Na<sub>2</sub>CO<sub>3</sub>, and 81.4 g. Et<sub>2</sub>SO<sub>4</sub> in 300 ml. H<sub>2</sub>O stirred 2 hrs. at 60° then 15 min. at 95° gave 15.0 g. N-methyl-VI (X). VIII (30.0 g.) refluxed 3 hrs. with 16.1 g. Na<sub>2</sub>CO<sub>3</sub> and 56.2 g. EtI in 300 ml. H<sub>2</sub>O gave 4.0 g. X. VI derivs. were thus prepared from the following 4-hydroxy-III (N-substituent and m.p. given): Bu, 165.5-6.5°;

HOCH<sub>2</sub>CH<sub>2</sub>, 195.5-6.2°; H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>, 162.5° (decomposition); cyclohexyl, 286.5-8.0°; PhCH<sub>2</sub>, 190-1.5°; Ph, 330°. Aqueous MeNH<sub>2</sub> (10%, 40 g.) and 20.0 g. Na 4-sulfonate (XI) of I left 5 hrs. at 15-30° precipitated 18.3 g. Na 4-sulfonate (XII) of N-methyl-III. Similarly analogs of XII were prepared (N-substituent given): Bu, HOCH<sub>2</sub>CH<sub>2</sub>, PhCH<sub>2</sub>, H, Et, cyclohexyl, BuEtCHCH<sub>2</sub>, Me<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>, XII (30 g.) and 30 g. NaOH in 300 g. MeOH were stirred for 10 hrs. under reflux, cooled, filtered, and the precipitate washed with MeOH, then with hot H<sub>2</sub>O to give 22.8 g.

g.

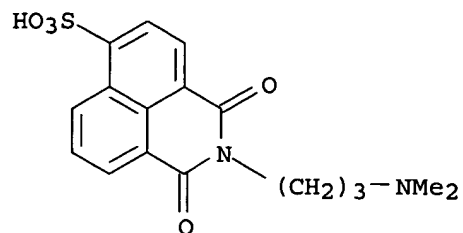
IX. Similarly, were prepared (alc., sulfonate, and product given): EtOH, XII, X; BuOH, XII, N-methyl-4-butoxy-III; BuEtCHCH<sub>2</sub>OH, XII, N - methyl - 4 - (2 - ethylhexyloxy) - III; MeOH, N-Bu analog of XII, N-butyl-V; MeOH, N-(HOCH<sub>2</sub>CH<sub>2</sub>) analog of XII, N-(HOCH<sub>2</sub>CH<sub>2</sub>)-V; MeOH, N-(PhCH<sub>2</sub>) analog of XII, N-benzyl-V; MeOH, N-cyclohexyl analog of XII, N-cyclohexyl-V; MeOH, N-(Me<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>) analog of XII, N-(3-dimethylaminopropyl)-V. XII (31 g.), 3 g. NaOH, and 3.1 g. (CH<sub>2</sub>OH)<sub>2</sub> in 300 g. dioxane were refluxed 5 hrs., cooled, and filtered to give 10 g. N-methyl-4-(2-hydroxyethoxy)-III, m. 196.8-8.5°. XII (30.0 g.), 30.0 g. NaOH, and 300 g. EtOCH<sub>2</sub>CH<sub>2</sub>OH heated 1 hr. at 80° gave 16.2 g. N-methyl-4-(2-ethoxyethoxy)-III, m. 124.5-6.0°; XII and Me<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>OH gave N-methyl-4-(2-dimethylaminoethoxy)-III, m. 142.8-4.0°; XII and PhCH<sub>2</sub>OH gave N-methyl-4-(benzyloxy)-III, m. 198.8-200°. To 114 g. PhOH and 15 g. KOH, previously heated to 140° until dry and then cooled, was added 50 g. N-methyl-4-bromo-III, the mixture heated for 7 hrs. at 140°, and poured into dilute aqueous NaOH to precipitate 52 g. crude product,

m.

152.3-66.5°, crystallization of which gave N-methyl-4-phenoxy-III, m. 177.5-8.5° (AcOH). Similarly VII and PhOH gave N-phenyl-4-phenoxy-III, crude m. 271.1-3.8°, pure m. 274-5.2° (AcOH). The title compds. can be applied to the finished fibers (examples of procedures are given) or can be incorporated during the preparation of synthetic materials. Fibers with which the whitening agents can be used include polyesters, cellulose acetate, polyvinyls, polyamides, wool, cotton, linen, papers, glass, and asbestos. Tests are described of the fastness of V (to light, washing, and perspiration) on polyethylene terephthalate, polyacrylonitrile, and cellulose acetate fibers.

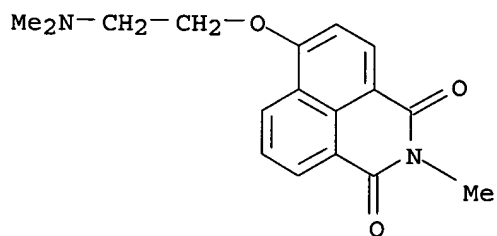
AN 1963:47201 CAPLUS  
DN 58:47201  
OREF 58:8070c-h,8071a-d  
TI Optical bleaching agents  
IN Kasai, Toshiyasu  
SO 39 pp.  
DT Patent  
LA Unavailable

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	BE 612955		19620515	BE	<--
	FR 1322849			FR	
	GB 1003083			GB	
	GB 1003084			GB	
PRAI	JP		19610121		
IT	1048-62-0, 1H-Benz[de]isoquinoline-6-sulfonic acid, 2-[3-(dimethylamino)propyl]-2,3-dihydro-1,3-dioxo-, sodium salt				
	2495-01-4, Naphthalimide, 4-[2-(dimethylamino)ethoxy]-N-methyl-				
	47268-66-6, Naphthalimide, N-[3-(dimethylamino)propyl]-4-methoxy-				
	(preparation of)				
RN	1048-62-0 CAPLUS				
CN	1H-Benz[de]isoquinoline-6-sulfonic acid, 2-[3-(dimethylamino)propyl]-2,3-dihydro-1,3-dioxo-, sodium salt (7CI, 8CI) (CA INDEX NAME)				



RN 2495-01-4 CAPLUS

CN 1H-Benz[de]isoquinoline-1,3(2H)-dione, 6-[2-(dimethylamino)ethoxy]-2-methyl- (9CI) (CA INDEX NAME)



RN 47268-66-6 CAPLUS

CN 1H-Benz[de]isoquinoline-1,3(2H)-dione, 2-[3-(dimethylamino)propyl]-6-methoxy- (9CI) (CA INDEX NAME)

